

Jennifer M. Siegal-Gaskins

Contact Information

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Research Interests

Theoretical cosmology, dark matter, particle astrophysics, high-energy astrophysics

Education

University of Chicago, Chicago, Illinois, USA
Ph.D., Physics, August 2008, Advisor: Angela Olinto
M.S., Physics, March 2004

Brown University, Providence, Rhode Island, USA
Sc.B., Physics, May 2002, Honors Thesis Advisor: Ian dell'Antonio
Magna cum Laude, with Honors in Physics
A.B., Theatre Arts, May 2002

Positions Held

CCAPP Postdoctoral Fellow September 2008 - present
Center for Cosmology and Astro-Particle Physics (CCAPP)
The Ohio State University, Columbus, Ohio, USA

Affiliated Scientist, Fermi Gamma-ray Space Telescope March 2009 - present

Grants

- Co-Investigator, "Anisotropy and energy spectrum of the gamma-ray background as probes of dark matter and astrophysical sources", Fermi Guest Investigator Cycle 2 Grant, 2009 - 2010, \$80k (PI: V. Pavlidou)

Honors and Awards

- Luise Meyer-Schutzmeister Memorial Award
Association for Women in Science Educational Foundation, 2007
- Doolittle-Harrison Fellowship
University of Chicago, 2007
- Smiley Prize for Outstanding Contributions to the Astronomy Program
Brown University, 2002

Professional Activities

- Conference organization:
 - Co-organizer, *3rd Annual Midwest Conference for Undergraduate Women in Physics*, to be held at the Ohio State University, January 2010
 - Co-organizer, *CCAPP Symposium*, to be held at The Ohio State University, October 2009
 - Co-organizer, *The impact of current and upcoming high-energy-astrophysics experiments on cosmological physics*, University of Chicago, October 2008
- Manuscript referee for *Journal of Cosmology and Astroparticle Physics*, *Physical Review D*, *Astrophysical Journal Letters*
- Professional memberships: American Physical Society, American Astronomical Society, Association for Women in Science

Teaching and Outreach Experience

- **Instructor**, Science and Technology Outreach and Mentoring Program, 2005 - 2008
Organized and led a weekly after-school science club at a Chicago public elementary school. Engaged young students in science through hands-on activities and experiments, and provided support and mentoring.
- **Teaching Assistant**, University of Chicago, 2006 - 2007
Physical Sciences 119: Stellar Astronomy and Astrophysics
Physics 123: Waves, Optics, and Modern Physics
- **Intern**, Museum Presentation in Science, 2004 - 2005
Designed and created new exhibits showcasing current research in cosmology for SciTech Hands-On Museum in Aurora, Illinois.
- **Tutor**, Scoreprep, 1999 - 2002
Worked one-on-one with high school students to improve academic performance and prepare students for standardized tests.
- **Instructor and Residential Advisor**, Exploration Summer Programs, 2001
Developed original curricula and taught workshops for middle school students in Physics and Commedia dell'Arte.

Preprints

- "Gamma-ray signatures of annihilation to charged leptons in dark matter substructure"
Matthew D. Kistler and **Jennifer M. Siegal-Gaskins**
submitted to *Phys. Rev. D*, arXiv:0909.0519

Refereed Publications

- “Robust identification of isotropic diffuse gamma rays from Galactic dark matter”
Jennifer M. Siegal-Gaskins and Vasiliki Pavlidou
Phys. Rev. Lett., 102, 241301 (2009)
- “A luminosity constraint on the origin of unidentified high energy sources”
Jennifer M. Siegal-Gaskins, Vasiliki Pavlidou, Angela V. Olinto, Carolyn Brown, and Brian D. Fields
J. Phys. G, 36, 055201 (2009)
- “Revealing dark matter substructure with anisotropies in the diffuse gamma-ray background”
Jennifer M. Siegal-Gaskins
JCAP, 10, 040 (2008)
- “Signatures of Λ CDM substructure in tidal debris”
Jennifer M. Siegal-Gaskins and Monica Valluri
ApJ, 681, 40 (2008)
- “Unresolved unidentified source contribution to the gamma-ray background”
Vasiliki Pavlidou, **Jennifer M. Siegal-Gaskins**, Brian D. Fields, Angela V. Olinto, and Carolyn Brown
ApJ, 677, 27 (2008)
- “Population studies of the unidentified EGRET sources”
Jennifer M. Siegal-Gaskins, Vasiliki Pavlidou, Angela V. Olinto, Carolyn Brown, and Brian D. Fields
Ap&SS 309, 43 (2007)
- “Unidentified EGRET sources and the extragalactic gamma-ray background”
Vasiliki Pavlidou, **Jennifer M. Siegal-Gaskins**, Carolyn Brown, Brian D. Fields, and Angela V. Olinto
Ap&SS 309, 81 (2007)
- “Gamma-ray and synchrotron emission from neutralino annihilation in the Large Magellanic Cloud”
Argyro Tasitsiomi, **Jennifer Gaskins**, and Angela V. Olinto
Astropart. Phys., 21, 637 (2004)

Conference Proceedings

- “The angular power spectrum of the diffuse gamma-ray background as a probe of Galactic dark matter substructure”
Jennifer M. Siegal-Gaskins
to appear in proceedings of *SnowPAC 2009*

- “Constraints on Galactic populations from the unidentified EGRET sources”
Jennifer M. Siegal-Gaskins, Vasiliki Pavlidou, Angela V. Olinto, Carolyn Brown, and Brian D. Fields
contributed to the First GLAST Symposium, *AIP Conference Proceedings*, 921, 293 (2007)
- “Guaranteed unresolved point source emission and the gamma-ray background”
Vasiliki Pavlidou, **Jennifer M. Siegal-Gaskins**, Brian D. Fields, Angela V. Olinto, and Carolyn Brown
contributed to the First GLAST Symposium, *AIP Conference Proceedings*, 921, 175 (2007)
- “Population studies of the unidentified EGRET sources”
Jennifer M. Siegal-Gaskins, Vasiliki Pavlidou, Angela V. Olinto, Carolyn Brown, and Brian D. Fields
contributed to TeV Particle Astrophysics II, *Journal of Physics: Conference Series*, 60, 312 (2007)
- “Neutralino annihilation gamma-rays from clumps and the LMC”
Argyro Tasitsiomi, **Jennifer Gaskins**, and Angela V. Olinto
New Astronomy Review, 48, 473 (2004)

Seminars

- High-Energy Astrophysics Seminar, Washington University in St. Louis, scheduled for January 2009
- Astrophysics Seminar, Fermilab, scheduled for January 2009
- Astrophysics Seminar, New York University, scheduled for December 2009
- Particle Astrophysics Seminar, Case Western University, scheduled for October 2009
- TAPIR Seminar, Caltech, scheduled for October 2009
- CCAPP Seminar, Ohio State University, December 2008
- HEP Seminar, Argonne National Laboratory, June 2008
- CTA Seminar, University of Illinois, Urbana-Champaign, April 2008
- Seminar, Kavli Institute for Particle Astrophysics and Cosmology, Stanford University, November 2007
- Seminar, University of California, Irvine, November 2007
- Cosmology Seminar, Kavli Institute for Particle Astrophysics and Cosmology, Stanford University, November 2007
- Seminar, Canadian Institute for Theoretical Astrophysics, Toronto, Canada, September 2007
- Astrophysics Seminar, University of Waterloo, Canada, September 2007

Conference Presentations

- *Dark Matter Annihilation and the Interstellar Medium*, Fermilab, September 2009 (Invited)
- *TeVPA 2009*, SLAC, July 2009
- *TAUP 2009*, Rome, Italy, July 2009 (Invited)
- *PPC 2009*, University of Oklahoma, May 2009
- *Detecting Dark Matter in the Milky Way*, Case Western Reserve University, March 2009 (Invited)
- *SnowPAC 2009*, Snowbird, Utah, February 2009
- *AAS 213th Meeting*, Long Beach, California, January 2009
- *Novel Searches for Dark Matter*, Ohio State University, November 2008 (Invited)
- *COSMO 2008*, Madison, Wisconsin, August 2008
- *International Astroparticle Physics Symposium*, Colorado School of Mines, May 2008
- *HEAD Meeting 2008*, Los Angeles, California, March 2008
- *AAS 211th Meeting*, Austin, Texas, January 2008
- *Cosmic Cartography*, University of Chicago, December 2007
- *TeV Particle Astrophysics III*, Venice, Italy, August 2007
- *The Milky Way Halo: Stars and Gas*, Argelander-Institut für Astronomie, Bonn, Germany, May 2007
- *The Hunt for Dark Matter*, Fermilab, May 2007
- *Getting involved with GLAST Workshop*, Argonne National Laboratory, April 2007
- *The First GLAST Symposium*, Stanford University, February 2007
- *TeV Particle Astrophysics II*, University of Wisconsin, Madison, August 2006
- *The Multi-Messenger Approach to High Energy Gamma-Ray Sources*, Universitat de Barcelona, Spain, July 2006
- *TeV Particle Astrophysics*, Fermilab, July 2005
- *Great Lakes Cosmology VII*, University of Michigan, Ann Arbor, May 2003

References

Angela V. Olinto

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